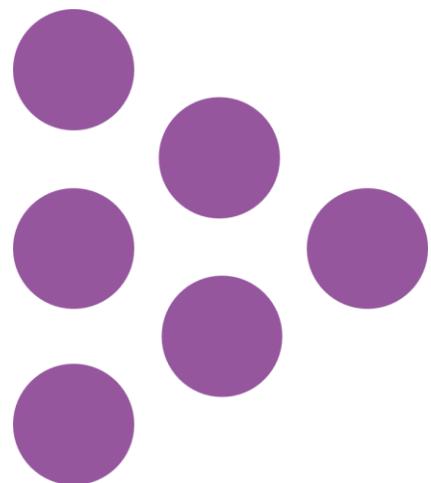


Report

Short Supply

**Addressing the Post-Pandemic Teacher Supply Challenge
in England**

National Foundation for Educational Research (NFER)



Short Supply: Addressing the Post-Pandemic Teacher Supply Challenge in England

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Executive Summary

The Government published its teacher recruitment and retention strategy in January 2019 in response to a growing teacher supply challenge in England (DfE, 2019). The strategy included several focus areas for policy, including introducing funded support for early-career teachers through the Early Career Framework (ECF), a new suite of national professional qualifications, action aimed at reducing teacher workload, supporting schools with approaches to flexible working and a streamlining of the initial teacher training (ITT) application process and provider market.

Four years since the publication of the teacher recruitment and retention strategy, and despite the increases in recruitment and retention that came about due to the Covid-19 pandemic, teacher supply in England remains in a perilous state.

Recruitment to teacher training in 2022 was extremely poor: the numbers of trainees recruited failed to meet the respective targets in 13 out of 17 secondary subjects as well as primary (DfE, 2022a). However, teacher supply challenges are as much a reflection of retention challenges as they are of recruitment issues. Every teacher retained means fewer trainees need to be recruited, so a systemic approach to addressing the teacher supply challenge must include measures aimed at improving retention.

Failing to recruit and retain enough teachers has significant implications for school staffing and therefore for pupils' education and learning. In turn, there are likely to be negative impacts on longer-term skill development and supply, particularly in science, technology, engineering and maths (STEM) subjects, and ultimately on long-term economic growth. Since schools with high levels of disadvantage struggle more with retaining teachers and show greater indications of teacher shortages, solutions to the national teacher supply challenge therefore also have important links to the challenges of levelling up educational outcomes, increasing social mobility and closing the disadvantage gap.

This essay draws together the range of insights that we have gained from a programme of research funded by the Nuffield Foundation. The essay discusses the implications of the research findings for teacher supply policy in England within the landscape in early 2023. We explore the key trends in teacher recruitment, retention and working conditions over the last decade, assessing what progress has been made in addressing the growing teacher supply challenge and where future policy attention could best be focussed to continue addressing the challenges.

Key findings

Teacher shortages

Failing to recruit and retain enough teachers has significant implications for how challenging schools find recruitment in those subjects the following year and therefore for pupils' education and learning. A key strategy used in secondary schools to mitigate difficulty recruiting teachers is deploying non-specialist teachers to teach certain subjects, which is more prevalent in schools that reported finding teacher recruitment the most difficult. Schools with high levels of disadvantage struggle more with retaining teachers and show greater indications of teacher shortages having a

negative impact on education quality, which has important implications for equalising educational opportunity.

Recruitment

The number of trainees entering ITT rose during the pandemic but was lower in 2022 than it was before the pandemic. Financial incentives targeted at hard-to-recruit subjects are well evidenced to be effective at improving supply, suggesting that they need to remain a part of the teacher supply policy toolkit. Pupil numbers are projected to fall over the next decade, which may ease some of the recruitment pressure. However, there is a considerable risk that the net impact on teacher supply of the Government's ITT market reforms is a loss of capacity, particularly in the short-term.

Retention

Teacher retention improved during the pandemic due to the wider labour market context but is expected to at least return to pre-pandemic levels in 2022 and beyond. Teacher leaving rates increased between 2010/11 and 2014/15 and improved just before the pandemic, between 2016/17 and 2018/19. Various factors may plausibly have contributed to these pre-pandemic trends, including the slowing pace of government policy change and slight improvements in teacher workload. Trends in the competitiveness of teacher pay are also likely to have contributed to the trends in teacher leaving rates. These are key factors to consider for addressing the current teacher retention challenges.

Workload

Teacher workload remains a significant issue affecting retention. Teachers in England work longer hours than similar individuals in other professions in a working week and are more likely to report wanting to work fewer hours. Teachers in England also work more hours and spend more time on non-teaching tasks than the average teacher in OECD countries. There remains further work to do in reducing the amount of time teachers spend working in general, and on non-teaching activities such as planning, marking and administration.

Pay and financial incentives

The competitiveness of teachers' pay compared to pay in the wider labour market has fallen since 2010, which is likely to be exacerbating both recruitment and retention challenges. Improving the competitiveness of teachers' pay and the generosity of the financial incentives for entering and staying in teaching are therefore key components of a compelling and well-evidenced policy strategy for improving recruitment and retention.

Accountability

While the wider research literature, based on surveys and qualitative research, finds compelling evidence that the high-stakes school accountability system plays a role in issues of workload and leadership quality, which impact negatively on teacher retention, our research finds a mixed picture on the role of the accountability system. School leaders in schools with low Ofsted ratings report finding teacher recruitment more challenging and are more likely to report using non-specialist teachers, which may suggest that Ofsted ratings can affect schools' ability to recruit through affecting their reputation. However, we also found no systematic difference between retention rates in England and Wales after accounting for differences in economic and contextual factors. Given

the lower-stakes approach to school accountability in Wales since devolution twenty years ago, this perhaps suggests that high-stakes accountability plays less of a role in teacher retention.

Part-time and flexible working

The Covid-19 pandemic transformed the world of work, with remote and home working becoming widespread and permanent features in many jobs in the wider workforce, while teachers continue to work in relatively inflexible environments. The teaching profession needs to respond to this threat to its relative attractiveness, either by increasing flexible working opportunities for teachers or become more attractive in other ways such as higher pay to compensate for a lack of work flexibility.

In summary, high teacher workload and a lack of pay competitiveness are each likely to be contributing to teacher leaving rates remaining high, while a reduced pace and volume of policy change since 2016 may have contributed, all else equal, to a slight improvement in the retention rate. The rapid growth of flexible working opportunities in the wider labour market since the pandemic also represents an important new threat to the overall attractiveness of teaching relative to other careers for new recruits, but most importantly for retaining existing teachers. The Government needs to take urgent action to address issues on all these fronts.

NFER recommends that:

- 1. The Government should develop a long-term pay and financial incentives strategy for sustainably improving teacher recruitment and retention. This should involve:**
 - a. Teacher pay uplifts that are higher than pay growth in the wider labour market for most or all teachers**
 - b. ‘Levelling up premium’ early-career payments be expanded to the whole country, while retaining higher payments for schools with higher levels of disadvantage.**
- 2. The Government should redouble its efforts to ensure the recommendations of the independent workload review groups are implemented in more schools.**
- 3. The Government should explore and understand further why part-time working appears to be more widespread and better supported in schools in Wales, to support more successful adoption of part-time and flexible working in England’s schools.**

This essay is based on findings from eight research outputs produced as part of the [Teacher supply, shortages and working conditions in England and Wales](#) research project, funded by the Nuffield Foundation.

- [Teacher Labour Market in England Annual Report 2020](#)
- [Teacher Labour Market in England Annual Report 2021](#)
- [Teacher Labour Market in England Annual Report 2022](#)
- [Comparative analysis of teacher attrition rates in England and Wales](#)
- [Teacher supply and shortages: the implications of teacher supply challenges for schools and pupils](#)
- [Teacher recruitment and retention in England data dashboard](#)
- [Teacher Labour Market in Wales Annual Report 2020](#)
- [Teacher Labour Market in Wales Annual Report 2022](#)



The Nuffield Foundation is an independent charitable trust with a mission to advance social well-being. It funds research that informs social policy, primarily in Education, Welfare, and Justice. It also funds student programmes that provide opportunities for young people to develop skills in quantitative and scientific methods. The Nuffield Foundation is the founder and co-funder of the Nuffield Council on Bioethics and the Ada Lovelace Institute. The Foundation has funded this project, but the views expressed are those of the authors and not necessarily the Foundation. Visit www.nuffieldfoundation.org.

This work was produced using statistical data from ONS. The use of the ONS statistical data in this work does not imply the endorsement of the ONS in relation to the interpretation or analysis of the statistical data. This work uses research datasets which may not exactly reproduce National Statistics aggregates.

1. Introduction

The Government published its teacher recruitment and retention strategy in January 2019 in response to a growing teacher supply challenge in England (DfE, 2019). The strategy included several focus areas for policy, including introducing funded support for early-career teachers through the Early Career Framework (ECF), a new suite of national professional qualifications, action aimed at reducing teacher workload, supporting schools with approaches to flexible working and a streamlining of the ITT application process and provider market.

In January 2020, NFER began a research project on teacher supply and shortages in England and Wales, to provide evidence and insights on teacher recruitment, retention and working conditions. A core aim of the project was to produce annual reports on the teacher labour market in England, monitoring the progress that was being made in the school system towards meeting the teacher supply challenge. Our June 2020 report on the teacher labour market in England (prepared before the Covid-19 pandemic) highlighted that some progress had been made in improving teacher retention and workload in 2019 (Worth, 2020).

The project also aimed to monitor teacher recruitment and retention trends in Wales using newly available teacher census data and providing detailed information about the nature of the recruitment and retention challenges in England across geographies, subjects and school types. Finally, two surveys of senior leaders in England aimed to provide new insights on the extent of teacher shortages in schools and how school leaders mitigated the challenges brought by recruitment and retention challenges.

In March 2020, the UK was engulfed by the profound consequences for society, the economy and the education sector of the Covid-19 pandemic. With schools closed to all but vulnerable pupils and children of keyworkers, teacher supply challenge become a second-order issue. Indeed, the economic consequences of the pandemic for the wider labour market led to an increase in teacher recruitment and retention, which our 2021 teacher labour market report highlighted (Worth and Faulkner-Ellis, 2021).

However, the impact of the pandemic on teacher recruitment and retention was relatively short-lived, with the wider labour market returning to strength very quickly during summer 2021. Our 2022 teacher labour market report highlighted that the challenge of ensuring sufficient supply of teachers in England was growing once again (Worth and Faulkner-Ellis, 2022a), with many secondary subjects predicted to fail to meet their recruitment targets and retention rates likely to return to pre-pandemic levels.

This essay draws together the range of insights that we have gained from this programme of research and discusses its implications for teacher supply policy in England within the landscape in early 2023. We draw particular attention to the negative implications of insufficient teacher supply for the education and learning of pupils, especially in the most-affected shortage subjects and the schools with the highest levels of pupil disadvantage. We explore the key trends in teacher recruitment, retention and working conditions over the last decade, assessing what progress has been made in addressing the growing teacher supply challenge and where future policy attention could best be focussed to continue addressing the challenges.

This essay focusses on the situation and the policy environment in England. Our research covered the recruitment and retention trends in Wales, and these are discussed in our annual reports on the teacher labour market in Wales (Ghosh and Worth, 2020; Ghosh and Worth, 2022). We draw on the findings from our comparative analysis of retention rates in England and Wales, highlighting the relevant implications for policy in England.

The essay begins in section 2 with a focus on teacher shortages, spelling out the implications for pupils and schools when there are teacher recruitment and retention challenges. Sections 3 and 4 highlight the current challenges of recruiting and retaining teachers, respectively, and some of the underlying factors affecting those challenges. Sections 5 to 8 provide further insights on four key factors affecting recruitment and retention: workload, pay, accountability and part-time and flexible working. Section 9 draws conclusions and makes recommendations for policymakers.

2. Teacher shortages

Failing to recruit and retain enough teachers has significant implications for how challenging school leaders report finding recruitment in those subjects the following year and therefore for pupils' education and learning.

Senior leaders in schools that find recruitment most challenging take actions to mitigate the impact of shortages, but there may still be impacts on pupil outcomes. For example, a key mitigation strategy used in secondary schools when teacher recruitment is difficult is deploying non-specialist teachers to teach certain subjects. Deployment of non-specialist teachers was far more prevalent in schools that reported finding teacher recruitment the most difficult, compared to other schools.

Schools with high levels of disadvantage struggle more with retaining teachers and show greater indications of teacher shortages having a negative impact. Solutions to the national teacher supply challenge have important links to the challenges of levelling up educational outcomes, increasing social mobility and closing the disadvantage gap.

Recruiting and retaining sufficient numbers of high-quality teachers is a necessity for the school system in England to deliver high-quality education. Failing to recruit and retain enough teachers has significant implications for pupils' education and learning. Data from our survey of senior leaders illustrates some of the key links between teacher supply, shortages and the implications for pupils (Worth and Faulkner-Ellis, 2022b).

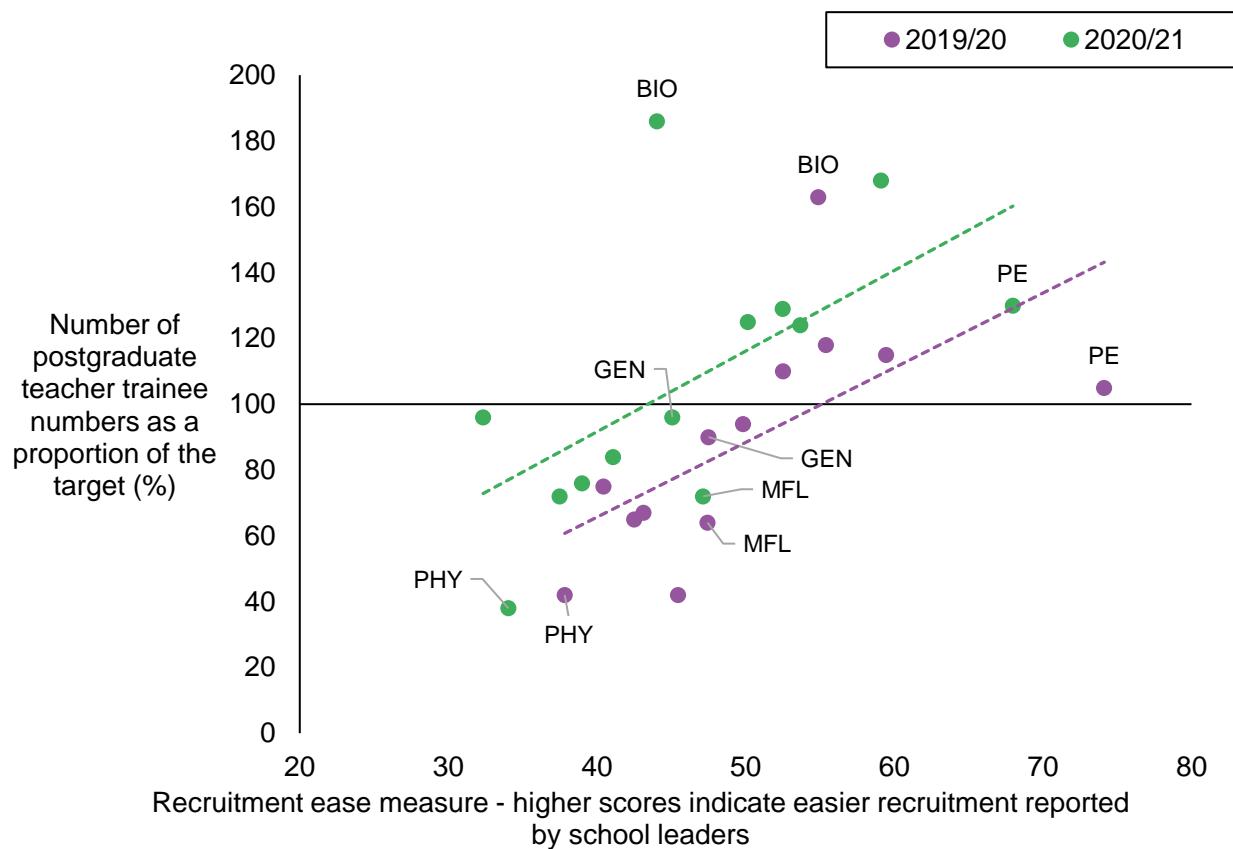
Failing to meet ITT recruitment targets has important consequences for how challenging schools find recruitment in those subjects the following year

Failing to recruit enough trainees to postgraduate teacher training programmes to meet the need for future teachers materially reduces the supply of available applicants to vacancies in the academic year after the training. In our senior leader surveys in autumn 2020 and 2021 we measured the ease or difficulty with which schools reported finding recruitment for teachers of different phases (for primary) and subjects (for secondary). We used statistical techniques¹ to estimate a 'recruitment ease' score for each phase/ subject in each year, according to how easy or difficult schools reported finding recruitment in that phase/ subject.

Figure 1 shows that there is a significant correlation between the extent to which secondary subjects met their recruitment targets and the extent to which secondary school leaders reported that recruitment was easy or difficult for that subject in the following year. In general, the subjects that outperformed their ITT recruitment target tended to have a higher recruitment ease score, and the subjects that did not meet their ITT recruitment target tended to have lower recruitment ease scores reported by schools.

¹ See Worth and Faulkner-Ellis (2022b) for methodological detail.

Figure 1 The subjects that did not meet their ITT recruitment targets were likely to be reported by school leaders as being more difficult to recruit teachers for



Source: NFER analysis of senior leader survey (2019/20-2020/21) and DfE ITT Census data.

Note: PHY=physics, BIO=biology, GEN=general science, MFL=modern foreign languages, PE=physical education.

Between 2019/20 and 2020/21 the slope of the line-of-best-fit stayed very similar, suggesting that the relationship between the two variables was quite stable. The line for 2020/21 is further up and to the left than in 2019/20, which reflects both the increase in ITT recruitment due to the Covid-19 pandemic and a corresponding slight increase in recruitment ease in many subjects as a result.

The main point – that the same subjects that struggle to recruit enough trainees are also the ones for which schools reported difficulty recruiting to fill vacancies – may seem tautological. However, schools do not exclusively recruit teachers straight from training courses, as they also hire teachers who move school and returners. It is reasonable to consider whether there is a substantial, ready supply of potential or returning teachers waiting to fill the gaps left by insufficient recruitment of new trainees to teacher training courses.

But newly qualified teachers represent a large share of new entrants to the state-funded sector. This survey evidence suggests that there is not such a ready supply of other sources of teachers,

despite there being substantial numbers of inactive teachers of working age². This is an important relationship to confirm in the data because it supports the idea that failing to meet the ITT recruitment targets has important implications for the teacher labour market and for schools' recruitment efforts.

The survey data shows that many schools are facing recruitment challenges, particularly secondary schools, where recruitment of trainees to teacher training programmes has been below the target numbers required for many years. School leaders were asked to rate the extent they were 'unable to assemble a field of quality applicants' (1 being 'not at all' and 8 being 'to a great extent'). On average, secondary school leaders said 5 and primary school leaders 3.8.

Senior leaders in schools that find recruitment most challenging take actions to mitigate the impact of shortages, but there may still be impacts on pupil outcomes

The senior leader survey also highlighted some of the further consequences of schools finding teacher recruitment more challenging. 'Staff shortages' in practice rarely means classrooms without teachers in them. School leaders have a range of actions they can take to mitigate the impact of recruitment difficulties on the school and its pupils. However, many of these actions may have negative implications for pupils' education and learning.

The schools that reported finding it the most difficult to recruit teachers reported that their key recruitment challenges were being unable to assemble a field of quality applicants and experiencing issues with the suitability/ quality of staff applying. In contrast, schools that reported finding teacher recruitment relatively easier did not report these factors as key challenges. Another key recruitment challenge reported by schools was budget challenges, but this was a more general challenge affecting many schools. This suggests that the quantity and quality of applicants to vacancies is the primary challenge linked to an overall sense of recruitment difficulty. While other challenges affecting recruitment, such as budget pressures or school/ geographical context issues, may influence school leaders' overall sense of the challenge to some extent, it is the response they get to vacancies that is the most significant.

Faced with a low-quality field of applicants, senior leaders can either hire a teacher that applies but that may be less than ideal, or not hire at all and mitigate the impact of the resulting shortage. Schools that reported finding teacher recruitment the most difficult were considerably more likely than other schools to report recruiting less-experienced-than-ideal teachers, and more likely to employ unqualified teachers than they normally would. Recruiting inexperienced or unqualified teachers may have negative implications for teaching quality.

However, not hiring a teacher in such a situation also has potential negative consequences for the school and pupils. A key mitigation strategy used in secondary schools when teacher recruitment is difficult is deploying non-specialist teachers to teach certain subjects. Among three key shortage subjects we explored, schools reported high levels of non-specialists teaching maths (45 per cent reporting at least 'some' lessons) and physics (39 per cent reporting at least 'some' lessons), with

² According to the DfE, in 2018 there were 260,000 qualified teachers of working age who were out of service but had previously been in service and a further 106,000 teachers with qualified teacher status who have never been in service.

a smaller but notable proportion of modern foreign languages (MFL) lessons being taught by non-specialists (17 per cent reporting at least 'some' lessons).

As shown in Figure 2, deployment of non-specialist teachers was far more prevalent in schools that reported finding teacher recruitment the most difficult, compared to other schools. In schools that reported finding teacher recruitment the most difficult, 62 per cent reported at least 'some' maths lessons being taught by non-specialists, 55 per cent for physics and 26 per cent for MFL.

Schools that reported finding teacher recruitment the most difficult were also considerably more likely than other schools to have school leaders doing more teaching than usual. This may reduce the school's leadership capacity and, in turn, limit the schools' ability to function well operationally and make improvements to teaching.

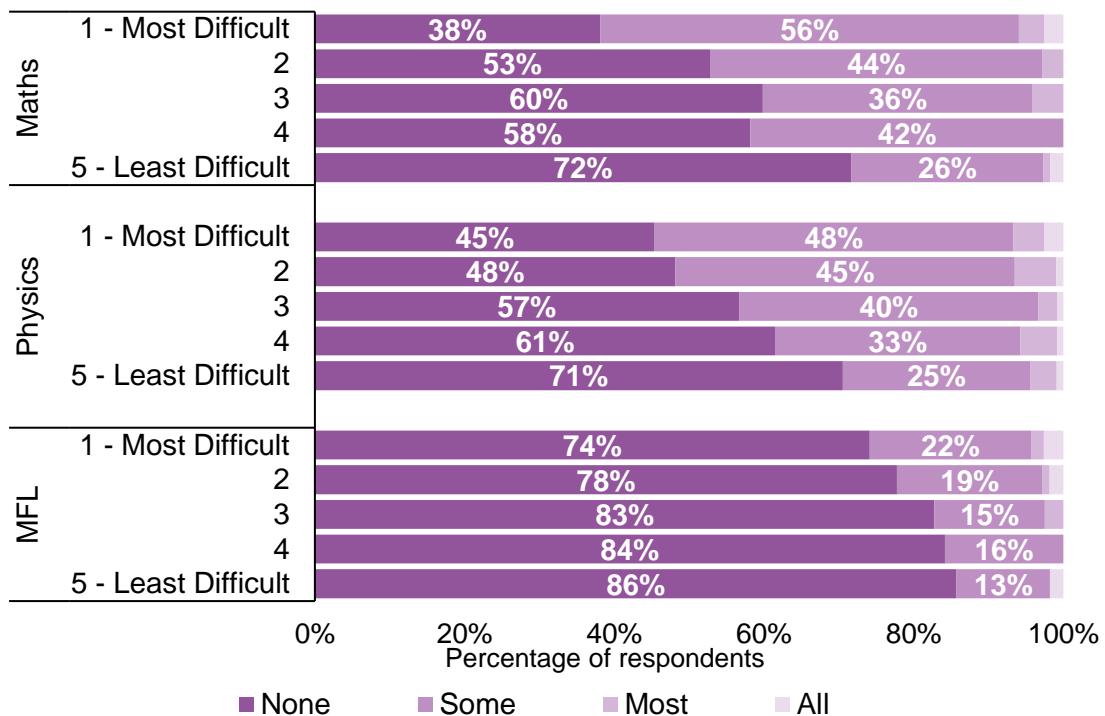
There was also some evidence of schools that reported finding teacher recruitment the most difficult being more likely than other schools to reduce non-contact time for existing teachers, with implications for their workload, stress, ability to engage in CPD and potentially for retention as a result.

There was mixed evidence of secondary schools using curriculum changes – such as reducing the offer of triple science or MFL qualifications to some or all pupils – to mitigate teacher shortages. Teacher under-supply was not a key reason given by senior leaders for why not all pupils were studying MFL, even in schools that reported finding teacher recruitment the most difficult. However, sufficient supply of science teachers appears to be an important factor for some schools deciding not to offer triple science to any pupils (alongside pupil interest in studying sciences, which is a major factor reported in the survey).

Overall, failing to meet the teacher training recruitment targets has a knock-on effect in the teacher labour market, which leads school leaders to take actions to mitigate the impact of teacher shortages on staffing in their schools. Many of these actions may be associated with negative implications for teaching quality and/or school improvement, which in turn may be acting as a drag on system-wide improvement of pupil outcomes. This is likely to have a negative impact on longer-term skill development and supply, particularly in STEM subjects, and ultimately on long-term economic growth.

Figure 2 The schools that were more likely to report having found recruitment more difficult were more likely to report using non-specialists in shortage subjects

Approximate proportion of lessons staffed by non-subject specialist teachers during the academic year, by subject and quintile of recruitment ease



Source: NFER senior leader survey – autumn 2021.

Schools with high levels of disadvantage struggle more with retaining teachers and show greater indications of teacher shortages having a negative impact

Our senior leader survey showed mixed evidence about the extent to which schools with high levels of disadvantage (measured by the proportion of pupils eligible for free school meals) were affected by recruitment challenges and shortages. There were also notable differences across school disadvantage level in the use of non-specialist teachers in physics and MFL, but not significantly for maths. More than half (57 per cent) of secondary school leaders with the highest level of disadvantage reported that at least some physics lessons were staffed by non-specialists compared to 38 per cent for the lowest level of disadvantage. Around a quarter (28 per cent) of leaders in schools with the highest level of disadvantage reporting that at least some MFL lessons were staffed by non-specialists compared to 16 per cent for schools with the lowest level of disadvantage. This indicates that schools with high levels of disadvantage may have experienced difficulty recruiting sufficient numbers of high-quality teachers in previous years.

However, the survey data showed no significant differences in how easy or difficult schools with different levels of disadvantage reported finding teacher recruitment in 2020 and 2021. This may be explained by the context of the Covid-19 pandemic: other research has found that the increase

in teacher supply during the pandemic may have had a somewhat equalising effect on how schools found teacher recruitment by disproportionately benefiting schools with more disadvantaged intakes (Allen and Hannay, 2021).

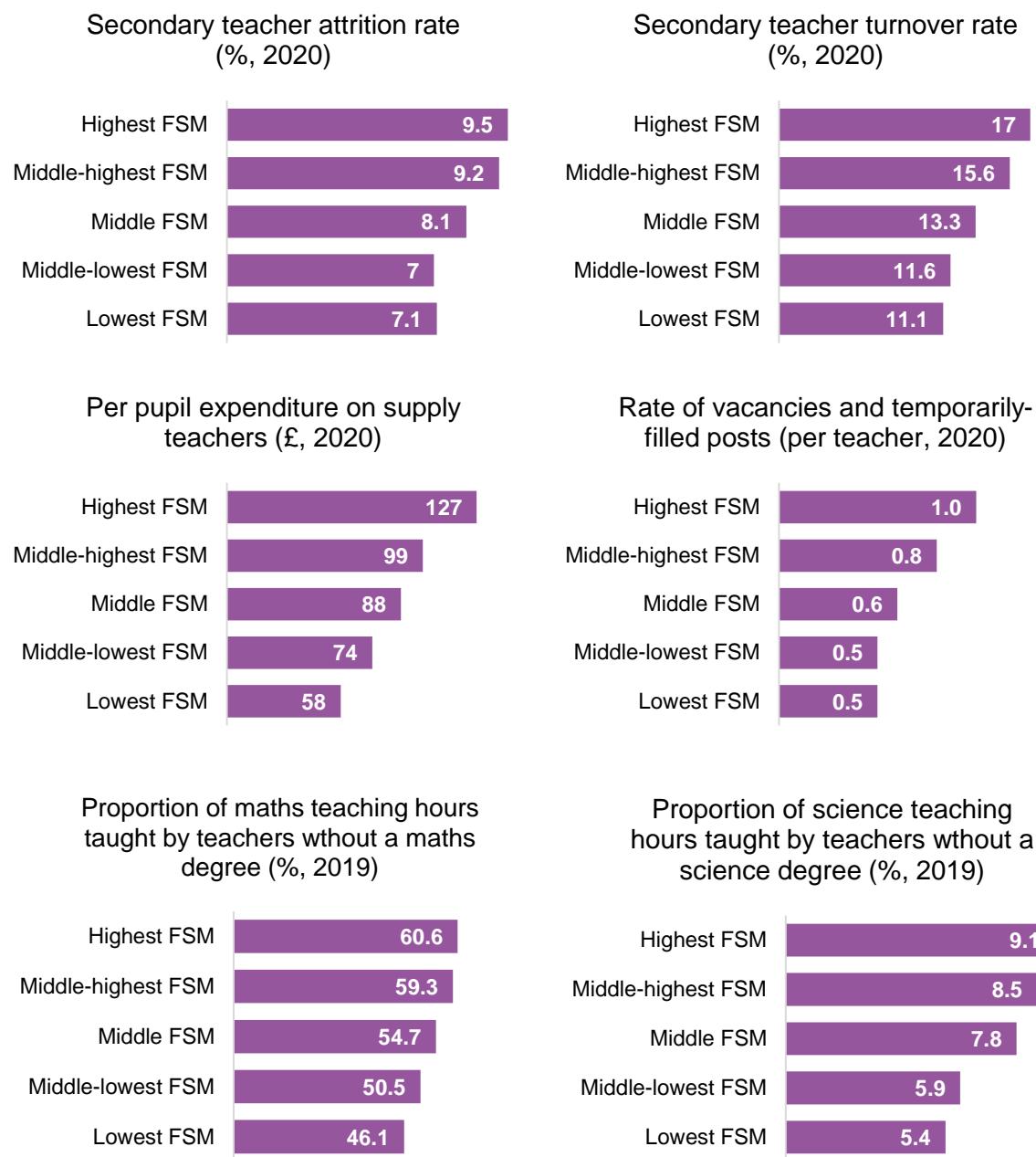
As part of this research study, we also conducted analysis of data from the School Workforce Census (SWC) and other administrative data sources to assess the differences in teacher retention and turnover rates, and indicators of teacher shortages. This data was published on the [Teacher Recruitment and Retention in England Data Dashboard](#).

As shown in Figure 3, the data shows that schools with higher levels of disadvantage have higher teacher attrition and turnover rates compared to other schools. The data also shows that schools with higher levels of disadvantage spend more per pupil on supply teachers, have more unfilled vacancies and temporarily filled posts and are more likely to have maths lessons taught by teachers without maths undergraduate degrees and science lessons taught by teachers without science undergraduate degrees. This suggests that schools with higher levels of disadvantage tend to find recruiting high-quality teachers more challenging and must take more actions to mitigate the impact of teacher shortages.

Deploying non-specialists to teach a subject is likely to have negative implications for the quality of the pupils' learning in the classroom, as having deep and fluent knowledge and flexible understanding of the content you are teaching is an important element of effective teaching (Coe *et al.*, 2020). The difficulties that schools with higher levels of disadvantage face in recruiting and retaining teachers may be impacting on pupils' education and learning and contributing, at least in part, to the gap in educational outcomes between pupils from disadvantaged backgrounds and their more affluent peers.

Therefore, solutions to the national teacher supply challenge have important links to the challenges of levelling up educational outcomes, increasing social mobility and closing the disadvantage gap. A core Government levelling up policy is the levelling up premium, which provides early-career payments to teachers in shortage subjects in some schools, with higher payments for schools with higher levels of disadvantage. While we argue in section 3 that the 'levelling up premium' is poorly targeted geographically, the evidence does support the continued targeting of higher early-career payments at schools with higher levels of disadvantage.

Figure 3 Teacher retention and turnover rates, and indicators of teacher shortages, are higher in secondary schools with the highest rates of pupils eligible for free school meals



Source: NFER analysis of DfE SWC and school spending data.

3. Recruitment

The number of trainees entering ITT rose during the pandemic but was lower in 2022 than it was before the pandemic. This has resulted in failing to meet the recruitment targets in 13 out of 17 secondary subjects as well as primary. Recruitment in STEM subjects, where targets have been consistently missed, has been particularly low.

According to the best currently available evidence, financial incentives targeted at hard-to-recruit subjects are well evidenced to be effective at improving supply, suggesting that they need to remain a part of the teacher supply policy toolkit. However, further evidence is needed to evaluate the retention impact of training bursaries. We recommend that 'levelling up premium' early-career payments be expanded to the whole country, while retaining a focus on schools with higher levels of disadvantage.

Pupil numbers are projected to fall over the next decade, which may ease some of the recruitment pressure. This will be felt first in primary, where pupil numbers will fall rapidly for the rest of the decade, and later for secondary.

There is a considerable risk that the net impact on teacher supply of the Government's ITT market reforms is a loss of capacity, particularly in the short-term. This supply side disruption could be damaging because it comes at a time when the overall secondary teacher recruitment situation is already precarious. The final stage of confirming accredited providers ahead of delivery in 2024 introduces further risk of providers exiting from the market and a loss of capacity, so needs to be managed by the Department for Education (DfE) carefully to ensure there is sufficient capacity and supply.

Teacher shortages affect schools when there are insufficient numbers of high-quality teachers available in the labour market to fill vacancies. Recruiting enough teachers into ITT to meet the supply needs is important. As noted above, below-target recruitment to ITT in a particular subject is associated with schools finding teacher recruitment more difficult. Addressing teacher supply challenges requires a steady supply of newly trained teachers in a range of subjects to replace the teachers who leave each year and, in the secondary sector, to meet growing demand due to growth in pupil numbers.

As documented in our series of annual reports on the teacher labour market in England, the last three years have been a rollercoaster for teacher recruitment, brought about by economic circumstances during and after the Covid-19 pandemic. The next few years are also likely to bring changing circumstances: changes to pupil numbers affecting the demand for teachers and the Government's ITT market reforms, which could influence supply.

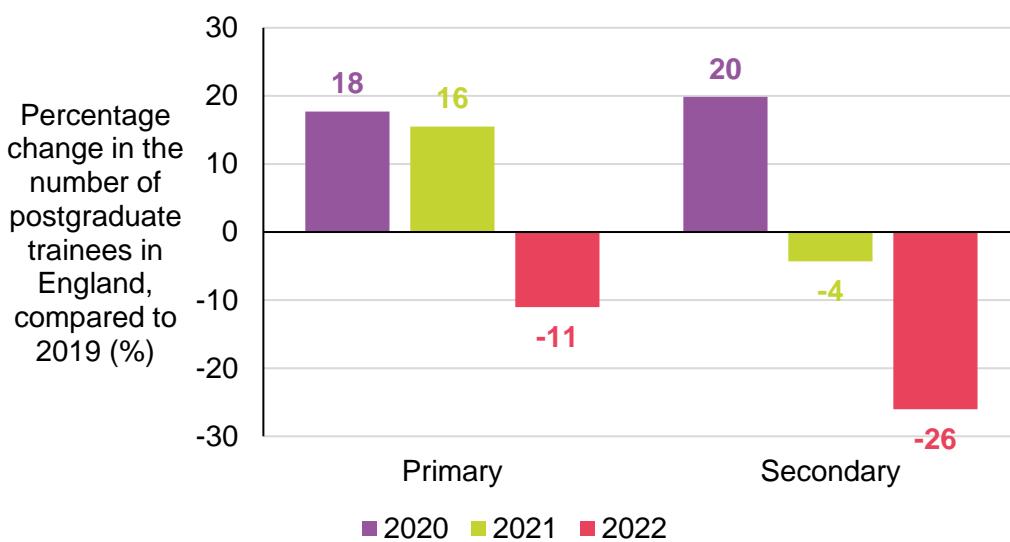
Trainee numbers have fluctuated due to the economic effects of the pandemic and its aftermath, but are in a difficult situation in 2022

NFER's annual reports on the teacher labour market have charted the volatile evolution of the teacher trainee recruitment situation over the last three years. This journey began with growing difficulties of meeting recruitment targets in the years before the pandemic, especially in perennial

shortage subjects such as physics, chemistry, computing, MFL and maths (Worth, 2020). The situation in 2019 was a continuation of several years of missed recruitment targets across several subjects.

The onset of the pandemic in spring 2020 brought a surge of interest in entering teaching as hiring opportunities in the wider labour market quickly dried up and teaching became one of the few career options that stayed fully open. As shown by the purple bars in Figure 4, the number of placed applicants on primary training courses in 2020 finished the application cycle 18 per cent higher than in 2019, while the number of placed applicants on secondary training courses finished the year 21 per cent higher than in 2019.

Figure 4 The number of entrants to ITT courses surged during the pandemic, but has slumped below the 2019 level in 2022



Source: NFER analysis of DfE ITT Census data.

The 2021 recruitment cycle continued with healthy numbers being recruited, but the rate of new applications tailed off as Covid-19 restrictions on society lifted from spring 2021 and the wider labour market returned to health (Worth and Faulkner-Ellis, 2022a). As shown by the green bars in Figure 4, the number of placed applicants on primary training courses finished the application cycle 18 per cent higher than in 2019. However, the number of placed applicants on secondary training courses finished the year just below the 2019 level, due both to the slowdown in applications as well as cuts to the bursary levels introduced by the Government in response to the Covid-related surge in applications.

The backdrop to the 2022 recruitment cycle was the strongly resurgent post-Covid labour market, marked by labour shortages across the economy and vacancies in the wider labour market peaking at levels higher than before the pandemic. Moreover, many of the bursary cuts introduced by the Government remained in place, further reducing the numbers applying to teacher training compared to before the pandemic. As shown by the red bars in Figure 4, the number of placed

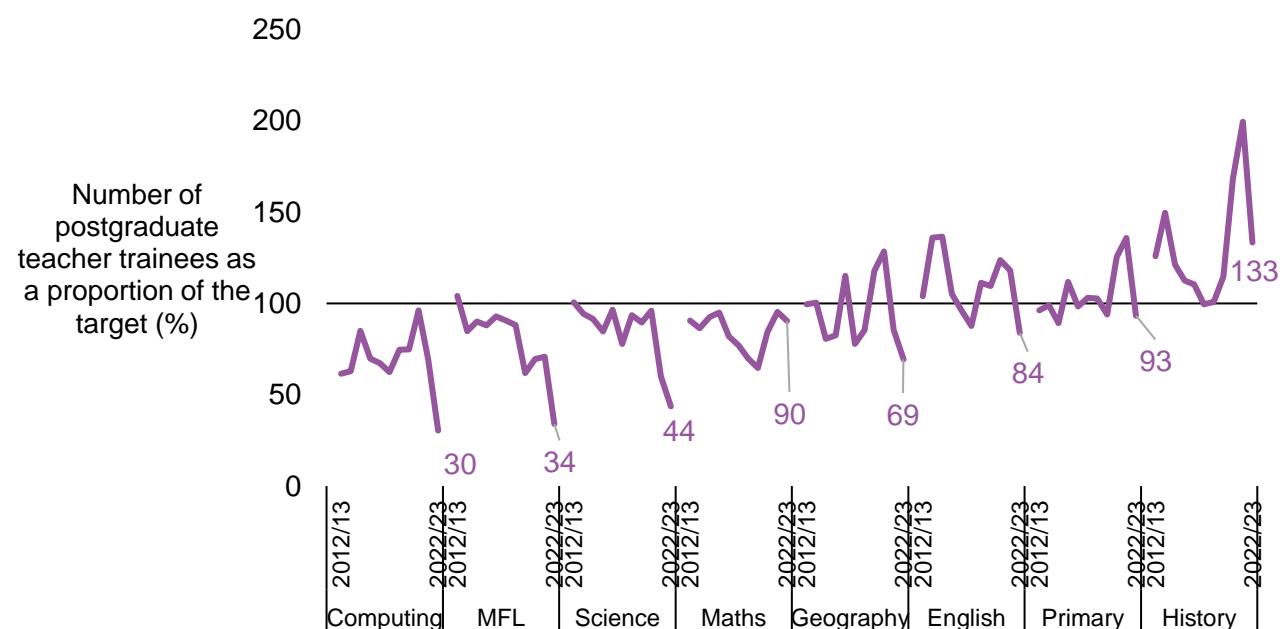
applicants on primary training courses finished the application cycle 8 per cent lower than in 2019, while the number of placed applicants on secondary training courses finished the year 23 per cent lower than in 2019.

This has resulted in not meeting the recruitment targets, especially in STEM subjects

Figure 5 shows the number of postgraduate teacher trainees entering training as a proportion of the target number required to meet predicted future demand for selected subjects between 2012/13 and 2022/23. The data shows that there has been fluctuation in the levels of recruitment compared to target over time.

However, there has been a general level of consistency for most subjects, with history tending to over-recruit compared to target, English and primary tending to recruit at the level of their respective targets, while subjects such as computing, science (especially physics), maths and MFL tending to be consistently below their respective targets, even during the pandemic. Due to a combination of shifting forecasts of teacher needs and changing bursaries, the numbers for geography have been inconsistent over time, but broadly around the level of the target.

Figure 5 Subjects such as computing, MFL, science and maths have consistently failed to recruit to target levels over the last decade



Source: NFER analysis of DfE ITT Census data.

However, the 2022 figures are lower than they have been in the recent past for most subjects, and 13 out of the 17 secondary subjects, as well as primary, were below their respective targets. The overall number of secondary recruits was 41 per cent below target, which is worse than in any previous year. The 2022 recruitment data is a clear indication that teacher recruitment is a long

way behind what is required, which is likely to be continued into future years without urgent policy action.

Computing, MFL and science achieved less than half of the target level of recruitment. It is important to note that a change in target-setting methodology in 2021, which increased some targets to account for under-recruitment in previous years, meant that many targets in shortage subjects were higher than in previous years. Nonetheless, recruitment of teachers to STEM subjects and MFL has not achieved the level required.

Financial incentives targeted at hard-to-recruit subjects are well evidenced to be effective at improving supply

Given the concentration of recruitment challenges in some subjects, the Government has targeted policy measures at attracting potential trainees into the subjects that under-recruit the most. Maths, physics, chemistry and computing attract the highest training bursaries to incentivise STEM graduates into teaching within a wider labour market that rewards STEM skills with high wage premiums. The research evidence suggests that bursaries have worked at attracting more people into teacher training, although less is known about their impact on subsequent retention (Worth, Tang and Galvis, 2022; Worth and Hollis, 2021) and further evidence is needed to evaluate this. Despite these subjects attracting the highest level of bursary, recruitment has not increased to the level required.

More recently, research has shown that the trial of early-career retention payments for maths and physics successfully led to higher retention of early-career teachers (Sims and Benhenda, 2022). After the retention payments scheme was paused during the pandemic, it was reintroduced with a different policy design as the 'levelling up premium' in 2021.

According to the best currently available evidence, financial incentives targeted at hard-to-recruit subjects are well evidenced to be effective at their immediate objectives, suggesting that they need to remain a part of the teacher supply policy toolkit. However, given the extent of the recruitment challenge the system faces in STEM subjects, the design of these policies could be enhanced to add further gains.

For example, the levelling up premium is targeted at early-career teachers in schools in education investment areas (EIAs – identified by the Government as geographical areas with low pupil attainment) and with high proportions of pupils on free school meals.

However, SWC analysis published on the NFER [Teacher Recruitment and Retention in England Data Dashboard](#) suggests that there is very little difference in average teacher retention rates between EIAs and areas that are not EIAs. Further, the data dashboard shows very few differences in teacher shortage measures, such as use of non-specialist teachers in maths and science, levels of unfilled vacancies and expenditure on supply teachers. While these areas have been identified as having low pupil attainment, which merits policy focus and attention, the primary policy mechanism of using early-career payments to increase teacher retention in shortage subjects may not be being targeted at the areas where this is a key issue that these schools face.

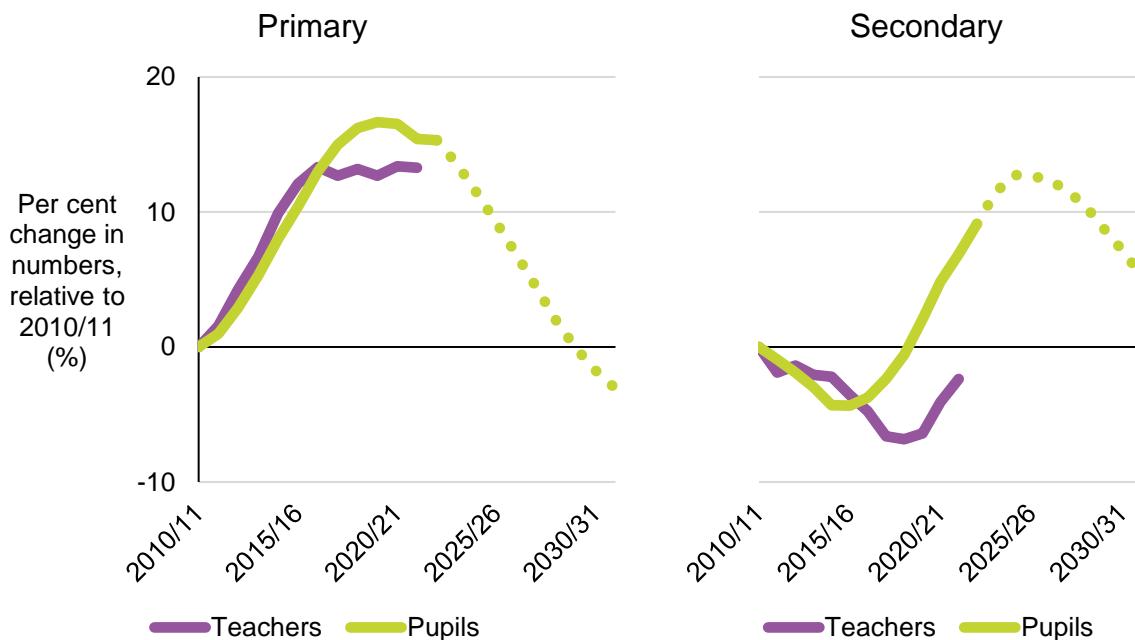
Given the evidence about the policy's effectiveness at improving retention, rolling the scheme out to all schools nationally could increase the benefit of the impact further. However, the evidence presented in section 2 on the particularly acute staffing challenges facing schools with higher levels of disadvantage does support the continued targeting of higher early-career payments at schools with higher levels of disadvantage.

Falling pupil numbers is a key factor for future teacher demand

Beyond the economic factors (such as the state of the wider economy and the use of financial incentives) discussed above and in section 6 on pay, there are two further factors affecting recruitment to ITT worth mentioning as significant for the next few years.

The first is the demand for teachers, which is driven most by changes in pupil numbers. Figure 6 shows the change in pupil and teacher numbers relative to 2010 levels for primary and secondary schools. The dotted green line also shows the forecast of pupil number growth over the next decade. The figures show that while primary and secondary teacher numbers mostly kept pace with pupil numbers over the first part of the last decade, the number of teachers did not keep pace with pupil number growth in either phase in the latter part of the decade. The data illustrates the impact the teacher supply challenge had on staffing in schools. The increase in teacher numbers for secondary schools in the last two years was driven by pandemic-related recruitment and retention changes.

Figure 6 The number of primary teachers required will fall over the next decade, and the number of secondary teachers required will do the same after 2025



Source: NFER analysis of DfE School Workforce and Pupil Projections data.

The pupil number forecasts show that primary pupil numbers are projected to fall substantially over the next decade, which will reduce the demand for teachers, and therefore the number of required trainees. The number of secondary pupils will peak in 2024, which may ease some of the secondary recruitment pressure, especially from the late 2020s when pupil numbers fall more rapidly.

However, not all the recruitment pressure will necessarily be eased by these trends since a more significant factor affecting the need for new teachers is the number of teachers leaving (see section 4 on retention). Nonetheless, falling pupil numbers over the next decade are likely to contribute to lowering of trainee targets.

ITT market reform could risk introducing disruption to the supply side

The second factor that may affect recruitment to ITT is provider capacity to train the required numbers of teachers. The Government's 2021 ITT Market Review introduced several measures aimed at improving the quality of ITT (DfE, 2021). The centrepiece of these measures was a new set of quality requirements that each provider that wanted accreditation from 2024 onwards would be assessed against. The outcome of the 2022 reaccreditation process is that the number of providers in the market will be reduced to 179 in 2024 from 232. A sizeable number of previously accredited providers have not been reaccredited (although they may continue ITT delivery by forming partnerships with accredited providers), while a small number of new providers have also been accredited.

Setting aside the debate about trainee quality, the overall implications of the ITT Market Review for teacher supply are uncertain. Providers closing after not achieving reaccreditation represents a loss of capacity to the training system. However, if existing providers can increase capacity (either through forming partnerships with unaccredited providers or employing teacher trainers from unaccredited providers that close) and new providers provide additional capacity, then the overall effect on capacity could be neutral or even positive.

However, particularly given that new providers may need time to build up to full capacity, there is a considerable risk that the net impact of the changes is a loss of capacity, particularly in the short-term. This supply side disruption could be damaging because it comes at a time when the overall secondary teacher recruitment situation is already precarious.

Further potential consequences of the consolidation in the ITT market relate to the impact on geographical availability of training provision. A market with fewer providers may have less geographical reach, and the new market may contain cold spot areas where training provision is lacking. This may have localised impacts, such as on the teacher recruitment prospects of schools in those areas. It may also have impacts on national supply, if reduced availability of a local training provider in cold spot area means that some applicants in those areas do not apply, where they might otherwise have applied.

A second post-accreditation stage for providers before they can be confirmed to deliver ITT from 2024 onwards involves providers demonstrating that their curriculum materials meet the quality threshold. This second stage introduces further risk of providers exiting from the market and a loss of capacity, so needs to be managed by DfE carefully to ensure there is sufficient capacity and

supply. The ITT reforms are designed to increase teaching quality through the quality of ITT provision, but the plans could risk affecting teaching quality in schools negatively if they contribute to exacerbating teacher supply issues and therefore shortages.

4. Retention

Teacher supply challenges are as much a reflection of retention challenges as they are of recruitment issues. Every teacher retained means fewer trainees need to be recruited, so a systemic approach to addressing the teacher supply challenge must include measures aimed at improving retention.

Teacher retention improved during the pandemic due to the wider labour market context but is expected to at least return to pre-pandemic levels in 2022 and beyond.

Teacher leaving rates increased between 2010/11 and 2014/15 and improved just before the pandemic, between 2016/17 and 2018/19. Various factors may plausibly have contributed to these trends, including the slowing pace of government policy change and teacher workload. Trends in the competitiveness of teacher pay may also have contributed to the trends in teacher leaving rates.

The teacher supply challenges discussed in the previous section are as much a reflection of retention challenges as they are of recruitment issues. The postgraduate ITT targets are based on the expected demand for new teachers, the largest component of which is replacing the teachers who leave each year. Every teacher retained means fewer trainees need to be recruited, so a systemic approach to addressing the teacher supply challenge must include measures aimed at improving retention.

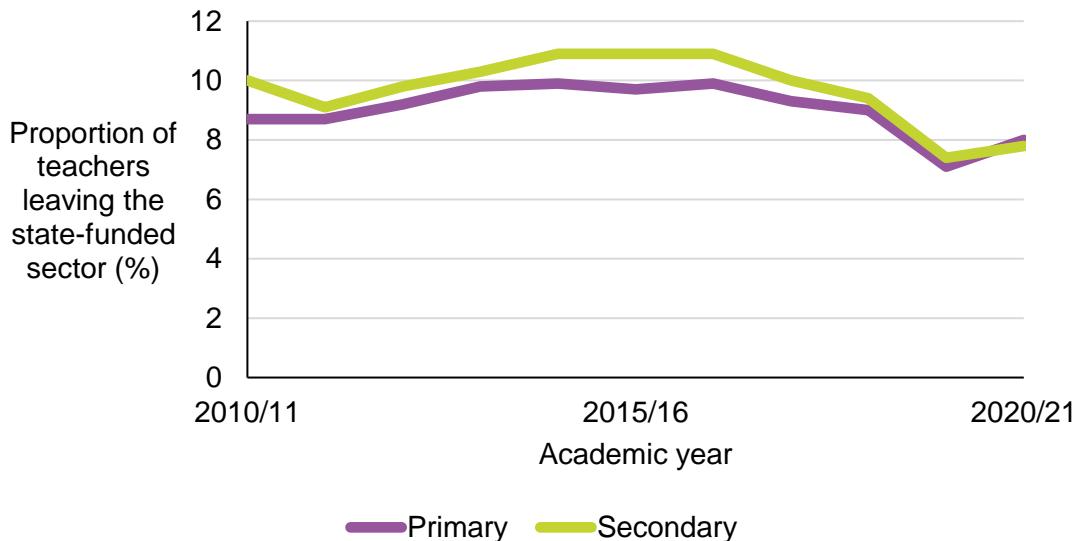
Teacher retention was improving before the pandemic, and improved during it, but is expected to at least return to pre-pandemic levels in 2022 and beyond

Figure 7 shows that the rate of teachers leaving the state-funded sector rose during the early part of the decade to a peak of 10.9 per cent for secondary teachers in 2014/15 to 2016/17. The peak for primary leaving rates was 9.9 per cent over the same period.

In the years just before the pandemic, the leaving rate of teachers fell steadily (Worth, 2020). The rate for secondary teachers fell from 10.9 per cent in 2016/17 to 9.4 per cent in 2018/19 and for primary teachers from 9.9 per cent to 9 per cent.

These may seem like small shifts, but they represent 14 per cent and 9 per cent reductions in the number of primary and secondary teachers leaving the state-funded sector, respectively. This, in turn, reduces the numbers of new trainees required to meet the future demand for teachers.

Figure 7 The proportion of teachers leaving the state-funded sector increased to a peak in 2016/17, before falling slightly before the Covid-19 pandemic and further fell during the pandemic



Source: NFER analysis of DfE School Workforce data.

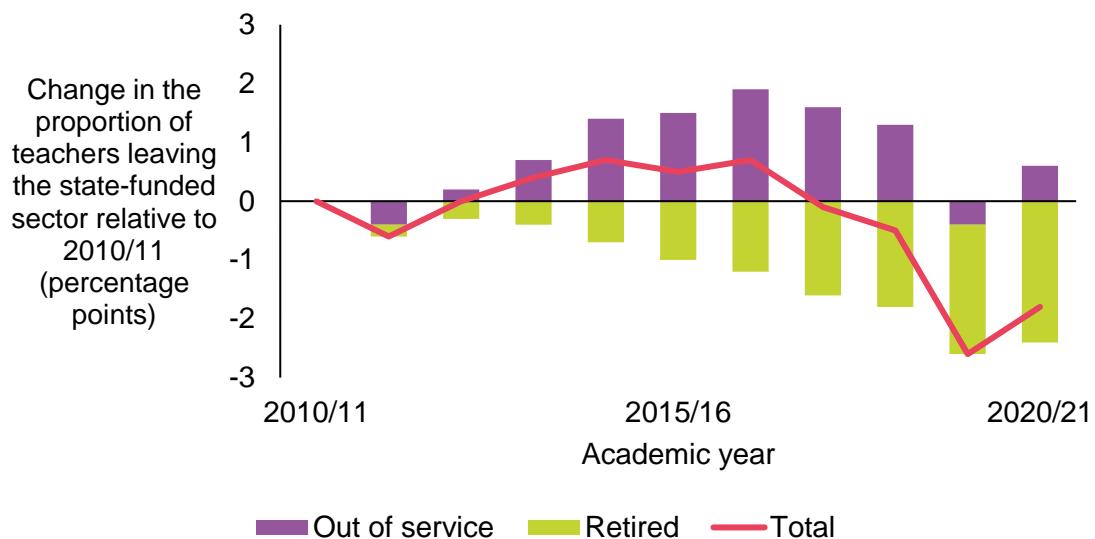
The Covid-19 pandemic had a further impact on teacher retention, as the number of teachers leaving the state-sector fell to unprecedented lows in 2019/20 of 7.3 per cent of secondary teachers and 7.1 per cent of primary teachers. The economic consequences of the pandemic are likely to have played a role in this, as the lack of hiring opportunities in the wider labour market likely tempted some teachers who might otherwise have left to instead stay. There may also have been direct implications of the Covid-19 lockdowns meaning moving job was difficult and teachers felt obliged to support their school during a period of acute crisis.

The leaving rate rebounded slightly in 2020/21, but the impacts of the pandemic in 2021 are likely to have lingered and contributed to keeping the leaving rate lower than it was before the pandemic. Data from teacher vacancies and surveys suggest that the number of teachers leaving in 2021/22 is likely to have at least returned to the level it was at before the pandemic (Allen, Ford and Hannay, 2022; Worth and Faulkner-Ellis, 2022a). Indeed, the DfE is anticipating 'a post pandemic 'rebound' in leaver rates, as some of those teachers that delayed their decision to leave service in 2020/21 will actually do so' (DfE, 2022b).

Figure 8 breaks down the change in the leaving rate since 2010/11 into two components: the number of teachers retiring and the number of working-age teachers leaving service. The data combines both primary and secondary teachers, for whom the trends are very similar. The data shows that the number of teachers retiring has been steadily declining since 2010, which continued into the pandemic. In 2020/21, around one per cent of teachers retired, compared to around three per cent in 2010/11.

In contrast, the number of working-age teachers leaving has increased markedly over the decade, by over two percentage points by the 2016/17 peak, before falling back. The key to understanding recent trends in retention rates, and to addressing them in future, is the leaving behaviour of working-age teachers.

Figure 8 The proportion of teachers retiring has steadily reduced since 2010/11 and the overall rise in leavers has been driven by more working-age teachers leaving



Source: NFER analysis of DfE School Workforce data.

Workload, the pace of policy change and pay competitiveness are all likely to have contributed to the trends in teacher retention

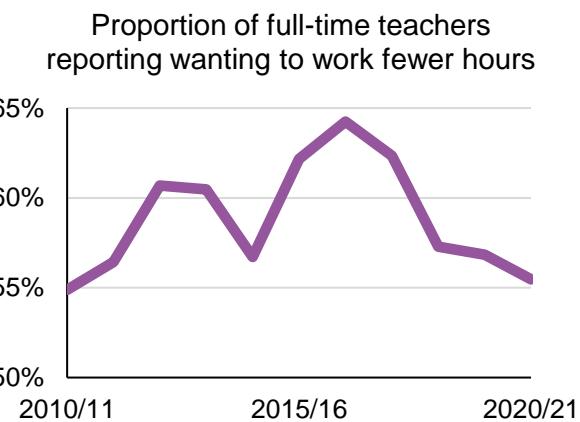
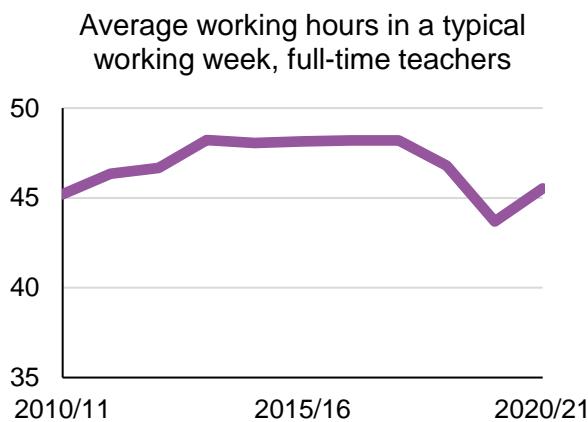
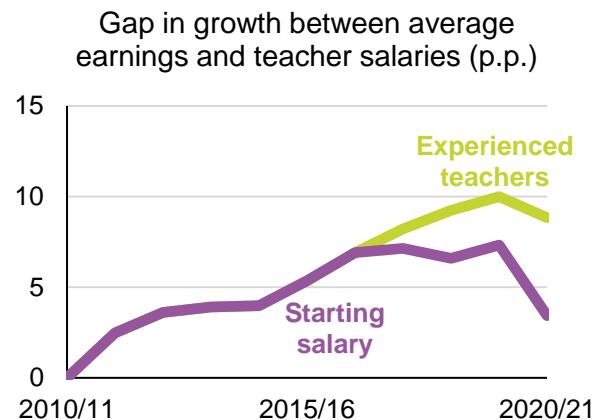
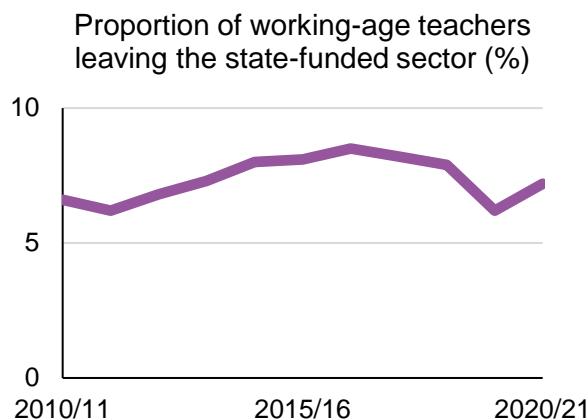
Key to addressing the retention of teachers is to understand its drivers. The research evidence highlights several key factors affecting teacher retention including workload, pay and the volume and pace of policy change (among other factors).

A core part of NFER's teacher labour market reports has been to analyse the trends in these factors to assess their contributions to the high-level trends in recruitment and retention.

Figure 9 presents data relating to some of these key factors over the last decade. As noted above, the pre-pandemic trend in retention was marked by an increase in teacher leaving rates during the early part of the decade, peaking during the period 2014/15 to 2016/17 and falling again up to 2018/19.

A similar trend is evident in two variables linked to teacher workload summarised in Figure 9: the average number of hours worked by full-time teachers in a normal working week and the proportion of full-time teachers who report preferring to work shorter hours. Both measures from the Labour Force Survey rose during the early part of the decade and fell in the years just before the pandemic.

Figure 9 The trend in working-age teacher attrition rates has similarities with the trends in teacher working hours, perceptions of working hours, and the gap in growth rates between average earnings and teacher pay



Source: NFER analysis of DfE School Workforce and Labour Force Survey data.

Unmanageable workload is consistently the most cited reason ex-teachers give for why they left the profession (DfE, 2017). The similar trends in workload-related factors and teacher leaving rates suggests that workload reduction in the years before the pandemic could be a significant factor for explaining why retention rates improved slightly.

Unmanageable workload is a more complex concept than simply the number of hours worked or perceptions about working hours. It also relates to what tasks and activities teachers are doing, how much influence they have over their work and the expectations placed on them by senior leaders and the wider system. Section 5 on workload explores the various aspects of workload and their trends in more detail.

Another commonly-cited reason ex-teachers give for why they left teaching is government initiatives and policy changes. The first half of the 2010s saw a large amount of education policy change in England, such as the revised national curriculum, new assessments and school

accountability measures and a revised Ofsted inspection framework. The pace of new policy initiatives in education slowed considerably after the 2015 general election, but implementation of many of the earlier changes continued; for example, the national curriculum was fully applied (apart from year 11 science) from September 2016 and the new secondary school accountability measure Progress 8 was first applied to all schools in 2016.

The slowdown in the pace of new policy initiatives, and the bedding in of earlier policy changes, from 2016 onwards also coincides with the fall in the teacher leaving rate between 2016/17 and 2018/19. It is therefore also a plausible factor that could have contributed to the fall in the leaving rate. Indeed, the implementation of policy initiatives may have contributed to the increase in teacher workload, which was, in turn, associated with a fall in leaving rates.

Pay is not typically mentioned by ex-teachers as a key factor for why they left teaching. However, the research evidence highlights that lower competitiveness of teacher pay relative to outside earnings (i.e. the growth in teacher pay being lower than the growth in the pay that a teacher might expect to earn if they left teaching) is associated with higher teacher leaving rates (DfE, 2022c). Recent NFER research has also established a relationship between higher competitiveness of teacher pay relative to the pay of subject-specific alternative graduate career paths and greater interest in entering teacher training (Worth, Tang and Galvis, 2022).

Pay competitiveness should therefore be considered an important potential factor for teacher recruitment and retention. As shown in Figure 9, between 2010/11 and 2016/17 average earnings in the UK economy grew more quickly than teacher pay³. This is also likely to have contributed to the rise in the teacher leaving rate over this period. From 2017/18 there were a series of teacher pay awards that differentiated pay increases by level of experience. Starting salaries, and other pay points on the main teacher pay scale, were increased by around the same as average earnings, while the pay of experienced teachers was increased by less than average earnings. As shown in Figure 9, this resulted in the gap between average earnings growth and teacher starting salary growth narrowing by more than the gap between average earnings growth and experienced teacher salary growth.

Recent evidence suggests that the early-career teachers these pay increases were targeted at are likely to be more responsive (in terms of their decisions about whether to leave teaching) to changes in pay competitiveness than more experienced teachers (Sims and Benhenda, 2022; DfE, 2022c). The net impact of these pay changes on the leaving rate is therefore likely to have been less negative than in the early part of the decade when the pay gap grew substantially. This may indicate that trends in pay may also be a plausible factor that contributed partly to the fall in the leaving rate between 2016/17 and 2018/19.

³ We use average earnings as a proxy for the outside options available to teachers. It is possible to make other comparisons, such as to the pay in other professional occupations. However, recent NFER research established evidence for two stylised facts that are relevant for the validity of this comparison: (1) teachers who leave enter a range of different jobs and most do not enter other professional jobs, (2) the growth in the pay of professional occupations over time is very closely aligned with the growth in average earnings over time (Worth and McLean, 2022).

Isolating which of the three factors – workload, pay and the pace of policy change – are likely to have contributed most to the fall in the leaving rates (and indeed whether they have at all) is extremely challenging from descriptive analysis alone. However, given the trends and the empirical support for the relevance of each of these factors for explaining teacher retention, it seems plausible that all three could have contributed in their own ways to the fall in the teacher leaving rate.

5. Workload

Unmanageable workload is consistently the most cited reason ex-teachers give for why they left the profession. Teachers in England work longer hours than similar individuals in other professions in a working week and are more likely to report wanting to work fewer hours. Teachers in England also work more hours and spend more time on non-teaching tasks than the average teacher in OECD countries.

Workload is a more complex concept than simply the number of hours worked or perceptions about working hours, also including what tasks and activities teachers are doing, how much influence they have over their work and the expectations placed on them.

Teacher workload remains a significant issue. There remains further work to do in reducing the amount of time teachers spend working in general, and on non-teaching activities such as planning, marking and administration. The Government should redouble efforts to ensure the recommendations of the independent workload review groups are implemented in more schools.

As mentioned in section 4, the average number of hours worked by full-time teachers in a normal working week and the proportion of full-time teachers who report preferring to work shorter hours both rose during the early part of the 2010s and fell in the years just before the pandemic. This suggests that some progress appeared to have been made in reducing teacher workload prior to the pandemic (Worth, 2020). Since unmanageable workload is the most cited reason ex-teachers give for why they left, this may also have contributed to the fall in the teacher leaving rate in the two years before the pandemic.

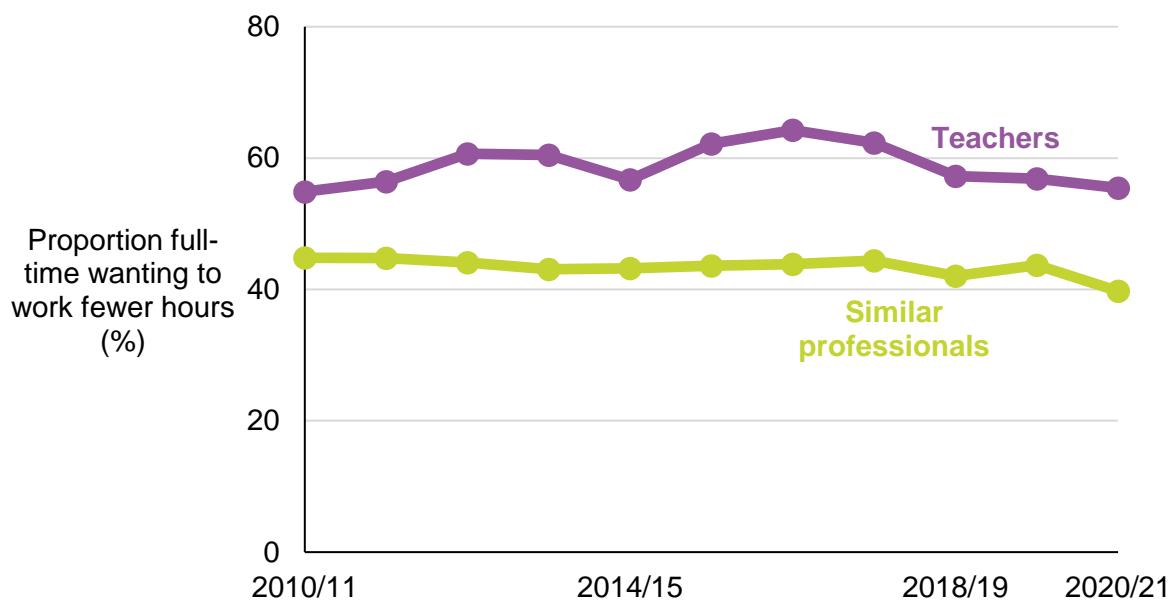
Unmanageable workload is a more complex concept than simply the number of hours worked or perceptions about working hours. It also relates to what tasks and activities teachers are doing, how much influence they have over their work and the expectations placed on them by senior leaders and the wider system. Evidence from the DfE 2019 Teacher Workload Survey shows that not only did overall average working hours reduce between 2016 and 2019, but the most significant reductions in teachers' working time were on activities relating to planning and preparation, marking and data recording and monitoring (Walker, Worth and Van den Brande, 2019).

These are all activities that teachers report that they spend too much time on. Further, teachers spending more time on planning and marking is associated with lower well-being (Jerrim, Sims and Allen, 2021). It seems quite possible that the work of the independent workload review groups and the resulting support and guidance for schools, may have contributed to these reported reductions.

However, despite these reductions, most teachers said they still felt they spent too much time on planning, marking, data management and general administrative work. Indeed, data from the LFS suggests that there have been no further reductions in teacher workload during the pandemic (outside of a temporary reduction in teacher working hours during the first period of school closures due to a lack of systems for remote learning being in place).

Throughout the pandemic, teachers have remained more likely than similar professionals to report wanting to work fewer hours. Figure 10 shows that in 2020/21 55 per cent of full-time teachers would have preferred to work shorter hours, compared to 40 per cent of full-time similar professionals. Teachers also work longer hours and spend more time on non-teaching tasks than the average teacher in OECD countries (Jerrim and Sims, 2019).

Figure 10 Throughout the pandemic, teachers have remained more likely than similar professionals to report wanting to work fewer hours



This indicates that teacher workload remains a significant issue as more than half of full-time teachers perceive that they work too many hours. There remains further work to do in reducing the amount of time teachers spend working in general, and on non-teaching activities such as planning, marking and administration. The Government should redouble efforts to ensure the recommendations of the independent workload review groups are implemented in more schools.

6. Pay and financial incentives

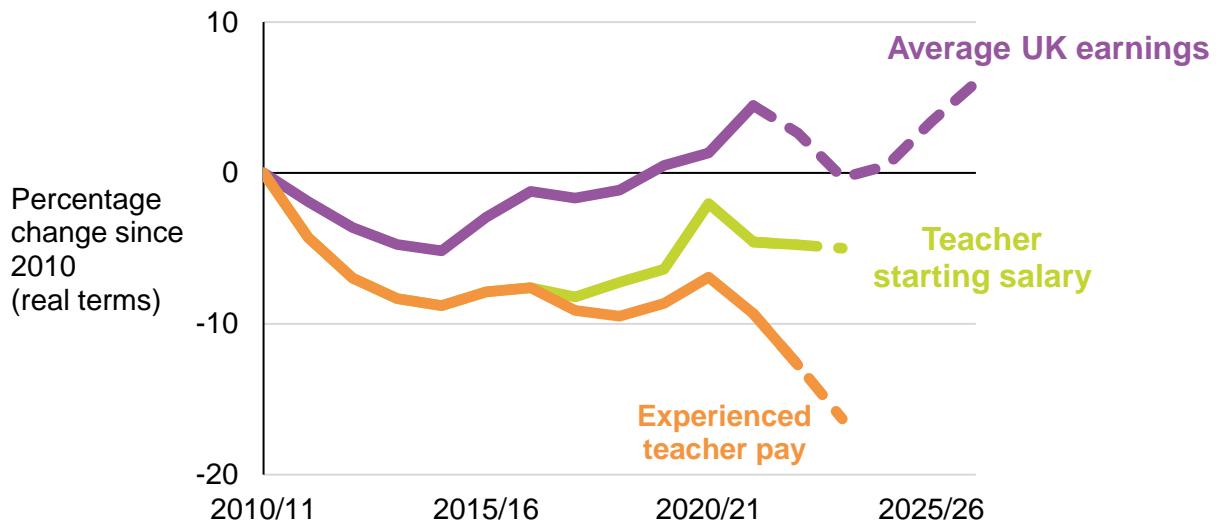
The competitiveness of teachers' pay compared to pay in the wider labour market has fallen since 2010. The lost competitiveness of teachers' pay is likely to be exacerbating both recruitment and retention challenges.

Improving the competitiveness of teacher pay is therefore a compelling strategy for improving recruitment and retention, which the Government should develop. Any effective strategy should include three key features:

1. Increase average teacher pay faster than average earnings, to improve both teacher recruitment and retention
2. Enhance subject-specific measures further to support recruitment and retention in shortage subjects
3. Avoid flattening the pay scale further, which would likely have negative implications for incentives for teachers to progress and retaining experienced and effective teachers.

The competitiveness of teachers' pay compared to pay in the wider labour market has fallen since 2010. Figure 11 shows the change in real terms (i.e., after accounting for inflation) of average earnings in the UK labour market, teacher starting salary and experienced teacher pay (the top of the upper pay scale). The gap that has opened between the growth in average teacher pay and the growth in average earnings, most pronounced for experienced teachers, reflects a reduction in pay competitiveness.

Figure 11 Teachers' pay is lower in real terms than in 2010/11 and has lost competitiveness relative to the wider economy over the last decade



Source: Office for National Statistics (Series KAB9), Office for National Statistics (Series D7BT), School Teachers' Pay and Conditions Documents. Economic forecasts: Office for Budget Responsibility – Economic and Fiscal Outlook – November 2022. Teacher pay assumptions: STRB Thirty-Second Report.

As mentioned in section 4, this reduction in competitiveness is likely to have contributed in part to the rising leaving rate in the early 2010s. Indeed, the lost competitiveness of teachers' pay is likely to be exacerbating both recruitment and retention challenges. Recent NFER research has also established a relationship between higher competitiveness of teacher pay relative to the pay of subject-specific alternative graduate career paths and greater interest in entering teacher training (Worth, Tang and Galvis, 2022).

Improving the competitiveness of teacher pay is therefore a compelling strategy for improving recruitment and retention. However, the tight government fiscal policy environment makes it unlikely that Government will adopt an ambitious plan aimed at improving recruitment and retention around pay. Nonetheless, it is worth considering what the key features of an effective strategy are.

Firstly, increasing average teacher pay faster than average earnings is likely to improve both teacher recruitment and retention. The Office for Budget Responsibility anticipates that average earnings will rise by 4.2 per cent in 2023 and 1.7 per cent in 2024 and 2025 (OBR, 2022). These should be the minimum benchmarks by which pay awards are judged for whether they are adequate to contributing to improving recruitment and retention. However, the STRB recommendations for 2023, which are shown as dotted lines in Figure 10, are likely to lead to a widening in the gap between experienced teacher pay and average earnings (STRB, 2022).

Second, a range of subject-specific measures are necessary to support recruitment and retention in shortage subjects. As discussed in section 3, financial incentives targeted at hard-to-recruit subjects are well evidenced to be effective at their immediate objectives. The Government's increases to the 2023/24 training bursaries are likely to increase supply to higher levels. While they are unlikely to achieve the required level of physics recruitment, the increased biology bursary is a welcome recognition that supply of science teachers can benefit from 'over-recruitment' of biology teachers, as they fill gaps in the supply of physics specialists. However, given the evidence about the effectiveness of early-career payments at improving retention, rolling out the 'levelling up premium' scheme to all schools could increase the impact further (Sims and Benhenda, 2022).

Finally, flattening the pay scale by awarding larger increases to early-career teachers has limits. The 2020, 2022 and 2023 increases, which increased starting pay more quickly than pay at other points to establish a £30,000 starting salary from 2024, are likely to have been effective at improving supply relative to spending the same total amount on a uniform pay award. This is because more resource was directed at groups of teachers whose labour market decisions are likely to be more responsive to pay. However, doing this flattens the pay scale and has other consequences. First, lower pay differentials may reduce the incentives for teachers to progress, for example into leadership positions. Second, fewer experienced teachers are likely to be retained relative to spending the same total amount on a uniform pay award. This in turn has implications for teaching quality, as experienced teachers tend to be more effective than inexperienced teachers (Podolsky *et al.*, 2019), and for support and mentoring capacity.

In summary, an effective financial strategy for sustainably improving teacher recruitment and retention is likely to involve a combination of teacher pay uplifts that are higher than pay growth in the wider labour market for most or all teachers and a further boost to measures aimed at supporting supply in shortage subjects.

7. Accountability

The school accountability system – including school inspection and use of school performance data – is often implicated as a key factor for teacher retention. Some of the analysis in this research project has focussed on quantitatively assessing the role of the accountability system in the current teacher recruitment and retention challenges.

Schools with lower Ofsted ratings report finding teacher recruitment more difficult and using non-specialists across maths, physics and MFL to a greater extent. This may impact on pupils' education quality, which may make school improvement more difficult to achieve. However, it is unclear whether this was the case before the school's current Ofsted rating, and therefore how much of the act of Ofsted rating the school is itself exacerbating, or merely highlighting, issues of educational quality.

Since education policy was devolved to Wales in 1999, there has been a divergence in policy approaches in England and Wales, including different approaches to school accountability and inspection. However, our research found no systematic difference between retention rates in England and Wales after accounting for differences in economic and contextual factors. Given the lower-stakes approach to school accountability in Wales since devolution twenty years ago, this perhaps suggests that high-stakes accountability plays less of a role in teacher retention.

The school accountability system is often implicated as a key factor for teacher retention. A DfE survey found that 'Ofsted pressure' was the fourth-most cited reason ex-teachers gave for why they had left teaching. Qualitative evidence also points to accountability being an underpinning factor for some of the most-cited reasons teachers give for leaving, such as workload or feeling supported and valued by the school leadership team (Lynch *et al.*, 2016).

However, directly assessing the impact of accountability in a quantitative way is challenging because most parts of the current accountability system have been in place for a long time and any changes are applied nationally. An exception is Jerrim and Sims (2021), who use international survey data to find a positive relationship between school system accountability and how stressed teachers and headteachers are about this aspect of their job. Some of the analysis in this research project has focussed on quantitatively assessing the role of the accountability system in the current teacher recruitment and retention challenges.

Schools with lower Ofsted ratings report finding teacher recruitment more difficult and using non-specialists across maths, physics and MFL to a greater extent

The data from our senior leader survey shows a clear relationship between a school's Ofsted rating and how difficult the school leader reported finding teacher recruitment. Schools that were rated 'outstanding' were less likely to be schools that reported finding recruitment the most difficult, while schools that were rated 'requires improvement' or 'inadequate' were more likely to be schools that reported finding recruitment the most difficult.

As well as overall recruitment difficulty, schools with lower Ofsted ratings reported more types of recruitment challenge than schools with higher ratings. Senior leaders from both primary and secondary schools rated as 'requires improvement' or 'inadequate' identified their Ofsted rating as a significant challenge to recruitment, while schools with an 'outstanding' or 'good' rating did not tend to report their school's Ofsted rating as a challenge to recruitment. Schools with lower Ofsted ratings also identified budget constraints as a much greater recruitment challenge than schools with higher Ofsted ratings.

Schools with lower Ofsted ratings also reported using non-specialists across maths, physics and MFL to a greater extent than schools with higher Ofsted ratings.

A school's Ofsted rating clearly has a significant association with difficulty recruiting teachers. However, it is difficult to disentangle the nature of this relationship. There are likely many factors that result in a school receiving a lower Ofsted rating, which may also be factors associated with finding recruitment more difficult.

Previous research has identified that there can be significant negative effects of receiving multiple lower than 'good' Ofsted ratings for several outcomes for schools, including increasing teacher turnover and making recruitment more challenging (Munoz-Chereau *et al.*, 2022). Our findings cannot identify the direction of this potentially complex and mutually reinforcing relationship, but can identify that a school's Ofsted rating appears to be strongly associated with greater difficulties with recruiting teachers.

There are significant differences in teacher attrition rates between England and Wales after accounting for differences in economic and contextual factors, but not all in the same direction

Given the interpretation challenges in the findings above, comparisons of education *systems* provide potentially more compelling settings for understanding the role of accountability. Devolution of education policymaking in the UK over the last few decades provides some valuable opportunities to evaluate impact where individual policies and approaches to policymaking differ, but research in this area also has significant challenges. For example, a key challenge is the isolation of the impact of individual policy changes when multiple policy changes are made at similar times.

As part of this research project, we investigated the extent to which teacher attrition rates differ between England and Wales and attempt to unpick and understand some of the reasons why they might differ (Faulkner-Ellis and Worth, 2022). We used newly available teacher census data in Wales to make robust comparisons of teacher retention rates in England and Wales in 2019/20 to 2020/21.

Since education policy was devolved to Wales in 1999, there has been a divergence in policy approaches in England and Wales. Wales has been characterised as having followed a more 'producerist' approach that 'emphasised collaboration between educational partners', in contrast to a more 'consumerist' approach in England (Reynolds, 2006). For example, in recent decades England and Wales have taken different approaches to school accountability and inspection, as well as testing and examinations, curriculum development and implementation, school autonomy,

and teacher pay (Sibleta and Jerrim, 2021). We explored the extent to which differences in attrition rates may be attributable to overall differences in policy approaches, but did so cautiously given the limitations of the data available to us.

Figure 122 shows teacher attrition rates in 2019/20 for the three groups of teachers in our analysis: all teachers in England, the England comparison group⁴ and all teachers in Wales, separately for primary and secondary schools.

Our analysis showed that while teacher attrition rates are lower in Wales than in England overall, a substantial portion of this difference is due to differences in economic and contextual factors between the two countries. We found that there are significant differences in attrition rates between teachers in the two countries after accounting for differences in economic and contextual factors. The attrition rate among secondary classroom teachers is 0.6 percentage points higher in England compared to in Wales, a difference that is statistically significant. However, among primary classroom teachers, there is a statistically significant difference of 0.6 percentage points in attrition rates between the England comparison group and Wales, with *lower* attrition in England.

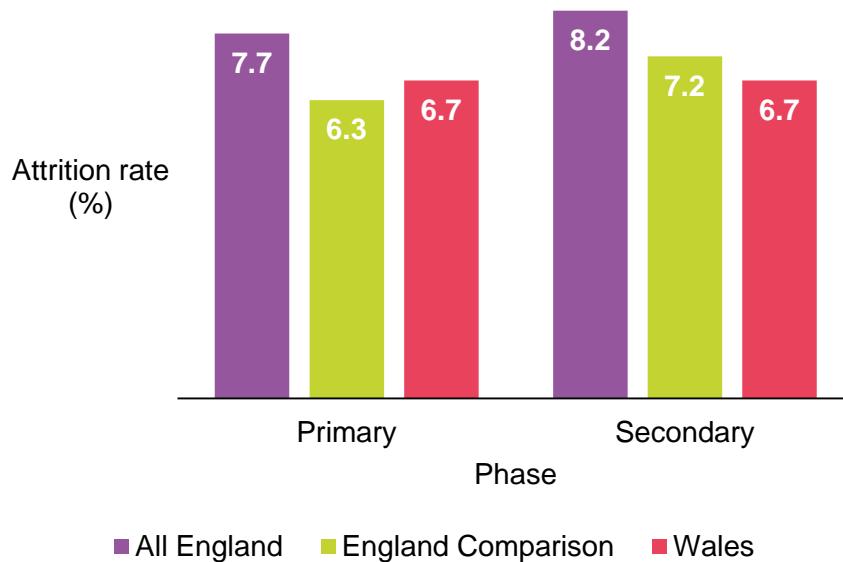
Since these differences were not all in the same direction, the evidence appears to challenge the hypothesis that the contrasting approach to policymaking in Wales compared to England is associated with universally lower rates of teacher attrition.

In summary, while a mixture of survey-based and qualitative research finds compelling evidence that the high-stakes school accountability system plays a role in issues of workload and leadership quality, which impact negatively on teacher retention, our research finds a mixed picture on the role of the accountability system.

Our research finds that school leaders in schools with low Ofsted ratings report finding teacher recruitment more challenging and are more likely to report using non-specialist teachers. This may impact on pupils' education quality, which may make school improvement more difficult to achieve. However, it is unclear whether this was the case before the school's current Ofsted rating, and therefore how much of the act of Ofsted rating the school is itself exacerbating, or merely highlighting, issues of educational quality.

⁴ The England comparison group is the weighted average of local authorities in England, weighted using statistical techniques to have similar average characteristics (economic and contextual factors including strength of the local labour market and deprivation levels) to Welsh local authorities. See Faulkner-Ellis and Worth (2022) for further methodological details.

Figure 12 Teacher attrition is lower in Wales compared to England, but differences in economic and contextual factors make a significant contribution to explaining the differences



Source: NFER analysis of 2019-20 SWAC and SWC data.

Note: the leaving rate figures for England differ slightly from those published in the DfE School Workforce in England statistical release, primarily because unqualified teachers are included in our figures, consistently in both countries.

Our research also found no systematic difference between retention rates in England and Wales after accounting for differences in economic and contextual factors. Given the lower-stakes approach to school accountability in Wales since devolution twenty years ago, this perhaps suggests that high-stakes accountability plays less of a role in teacher retention. A key limitation of these findings was that the attrition rate data is based on the 2020/21 academic year, which was significantly affected by the Covid-19 pandemic in both countries. Research exploring differences in attrition rates between the two countries in future years that have more typically functioning teacher labour markets would help to test the robustness of this tentative conclusions.

8. Part-time and flexible working

Part-time and flexible working was a key feature of the 2019 teacher recruitment and retention strategy. The Covid-19 pandemic transformed the world of work, with remote and home working becoming widespread and permanent features in many jobs in the wider workforce, while teachers returned to their classrooms and relatively inflexible work environments. The attractiveness of flexible working opportunities represents an important threat to the overall attractiveness of teaching for new recruits, but most importantly for retaining existing teachers.

The teaching profession needs to respond to this threat to its relative attractiveness. The most obvious way to respond is to increase flexible working opportunities for teachers. Part-time working appears to be more widespread and better supported in schools in Wales, which may offer schools and policymakers new perspectives on how to encourage it more in England's schools.

Another way for teaching to compete would be to become more attractive in other ways, so that the overall attractiveness of teaching is increased, despite its relative inflexibility. This could include higher pay to compensate for a lack of work flexibility compared to opportunities in the wider labour market.

Part-time and flexible working was a key feature of the 2019 teacher recruitment and retention strategy, underpinned by an acknowledgement that the demands of future cohorts of workers for flexibility would change. This, in turn, necessitated action to ensure teaching is compatible with having children and family life, to attract and retain teachers who may choose to instead find such flexible opportunities outside of teaching.

The Covid-19 pandemic transformed the world of work, with remote and home working becoming imposed on many workers, including teachers during the two periods of school closures to most pupils. Importantly, many of the flexibility changes have become permanent features in many jobs in the wider workforce, while teachers returned to their classrooms and relatively inflexible work environments.

Data from the Timewise Flexible Jobs Index demonstrates these trends in the wider workforce (Timewise, 2022). The proportion of jobs advertised with flexible working rose from ten per cent in 2015 to 17 per cent on the eve of the pandemic, highlighting the growing focus on offering flexible working in the wider labour market. The proportion of jobs advertised with flexible working rose further through the pandemic, reaching 30 per cent in 2022. The proportion of job adverts offering home working increased from three per cent just before the pandemic to 12 per cent in 2022.

Nonetheless, the attractiveness of flexible working opportunities represents an important threat to the overall attractiveness of teaching for new recruits, but most importantly for existing teachers, for two key reasons. First, the nature of the teaching job means that flexibility can be challenging to provide. Part-time teaching has its challenges for schools to introduce and manage effectively, including timetabling complexity and issues with communication and co-ordination. The structure of the school day and the inherent inflexibility of face-to-face teaching also makes flexible working, in

its more general sense, challenging to offer. However, research on flexible working in schools has highlighted examples, such as being permitted to take planning, preparation and assessment (PPA) time at home/remotely or to be off-site during non-contact hours (CooperGibson Research, 2020).

The second reason this trend represents an important threat to the relative attractiveness of teaching is that teaching is predominantly a female profession. Women tend to find part-time and flexible working opportunities more attractive, so the increased availability of them in the wider labour market means more may be tempted to leave teaching for other jobs. Our research has shown that teachers tend to earn less outside of teaching than they might have earned if they had stayed (Worth *et al.*, 2018; Worth and McLean, 2022). However, increased flexibility in a job outside of teaching may be sufficiently enticing overall as to be worth it for some teachers, despite lower pay.

The teaching profession therefore needs to respond to this threat to its relative attractiveness. The most obvious way to respond is to increase flexible working opportunities for teachers, to compete directly with their increased availability in other jobs. However, this is challenging for schools, particularly in the short-term. Also, the inherent inflexibility of the school-based, face-to-face teaching role means that it may be impossible to fully compete on flexibility.

Our comparisons of the teacher workforces and attrition rates in England and Wales highlight important differences in the approaches to part-time working in the two countries. Part-time teachers have significantly higher retention rates in Wales compared to comparator schools in England, and the fact that substantially more of the teaching workforce in Wales works part time suggests that greater attention is paid in Wales to making part-time working opportunities available for teachers. Recent policy work in England aimed at encouraging part-time and flexible working in schools may benefit from exploring and understanding further why part-time working appears to be more widespread and better supported in schools in Wales.

Another way for teaching to compete would be to become more attractive in other ways, so that the overall attractiveness of teaching is increased, despite its relative inflexibility. This is also easier said than done but might include higher pay to compensate for a lack of work flexibility compared to opportunities in the wider labour market.

Either way, the transformation of the flexible opportunities in the wider labour market means that teaching as a career 'package' will need to respond to new demands of a more competitive environment for attracting and retaining staff. Without any response to this trend, teaching will lose more of the mid-career and late-career teachers, particularly women, than it already loses each year.

9. Conclusions and recommendations

Four years since the publication of the teacher recruitment and retention strategy, and despite the increases in recruitment and retention that came about due to the Covid-19 pandemic, teacher supply in England remains in a perilous state.

Recruitment to teacher training in 2022 was extremely poor: the numbers of trainees recruited failed to meet the respective targets in 13 out of 17 secondary subjects as well as primary. However, teacher supply challenges are as much a reflection of retention challenges as they are of recruitment issues. Every teacher retained means fewer trainees need to be recruited, so a systemic approach to addressing the teacher supply challenge must include measures aimed at improving retention.

Failing to recruit and retain enough teachers has significant implications for school staffing and therefore for pupils' education and learning. Schools with high levels of disadvantage struggle more with retaining teachers and show greater indications of teacher shortages having a negative impact. Solutions to the national teacher supply challenge have important links to the challenges of levelling up educational outcomes, increasing social mobility and closing the disadvantage gap.

High teacher workload and a lack of pay competitiveness are each likely to be contributing to teacher leaving rates remaining high, while a reduced pace and volume of policy change since 2016 is likely to have contributed, all else equal, to a slight easing in the retention rate. The rapid growth of flexible working opportunities in the wider labour market since the pandemic also represents an important new threat to the overall attractiveness of teaching for new recruits, but most importantly for retaining existing teachers. The Government needs to take urgent action to address issues on all these fronts.

In particular, we recommend that:

- 1. The Government should develop a long-term pay and financial incentives strategy for sustainably improving teacher recruitment and retention. This should involve:**
 - a. Teacher pay uplifts that are higher than pay growth in the wider labour market for most or all teachers**
 - b. 'Levelling up premium' early-career payments be expanded to the whole country, while retaining higher payments for schools with higher levels of disadvantage.**
- 2. The Government should redouble its efforts to ensure the recommendations of the independent workload review groups are implemented in more schools.**
- 3. The Government should explore and understand further why part-time working appears to be more widespread and better supported in schools in Wales, to support more successful adoption of part-time and flexible working in England's schools.**

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